

ABSTRACT OF THE DISCLOSURE

In a manufacturing method of carbon nanotubes by means of laser ablation, carbon molecules having 5-membered carbon ring bonds (bonds of the pentagon of the fullerenes (C_{60} , C_{70} , C_{76} , etc.)) are included at least in part of the laser irradiation target. By use of such laser irradiation targets, single-wall carbon nanotubes can be formed efficiently in a low temperature process of 500 °C or lower (at 400 °C, for example). Carbon molecules having curved surfaces, such as carbon molecules having fullerene bonds, are preferably used in the laser irradiation target. As the carbon molecule having the fullerene bonds, a carbon molecule having a spherical surface, such as the C_{60} molecule, is preferably used. By use of such a laser irradiation target in a laser ablation process, single-wall carbon nanotubes can be formed efficiently in a low temperature process (at 400 °C, for example). Catalysts such as Ni and Co (Ni + Co: 5 at%, for example) are preferably used for the efficient formation of the single-wall carbon nanotubes. The manufacturing method can be conducted by use of simple production equipment such as a short pulse-width laser ablation apparatus, therefore, the production of the single-wall carbon nanotubes can be conducted efficiently with a low cost.